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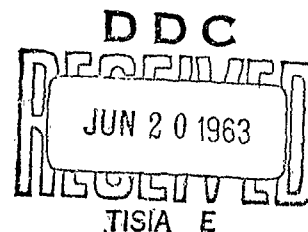
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AGAINST THE GROWING THREAT OF THERMONUCLEAR WAR

by A. V. Topchiyev and V. P. Pavlichenko

- USSR -



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AGAINST THE GROWING THREAT OF THERMONUCLEAR WAR

-USSR-

Following is the translation of an article by Academician A. V. Topchiyev and V. P. Pavlichenko in the Russian-language publication Vestnik Akademii Nauk SSR (Herald of the Academy of Sciences USSR), No 4, Moscow, November 1962, pages 100-104.

The special prominence which science occupies in the life of modern society also determines the special responsibility of scientists for its future. Scientists cannot avoid the question: for which ends will the results of their labor be used -- for the good of mankind or for war and destruction.

The sense of the responsibility of scientists before society began to be felt widely after the grandest achievement of the human mind -- the discovery of nuclear energy -- was first used for the mass annihilation of human beings. All remember the tragic fate of the people of Hiroshima and Nagasaki -- the first victims of the military use of nuclear energy.

Since that time mankind has lived under the growing danger of nuclear war, threatening catastrophic consequences for the very life of peoples and for their civilization formed over thousands of years.

All people of good will are resolutely united in the struggle to rid mankind of the threat of a nuclear-rocket war. In the front ranks of these fighters for peace are the scientists, who by virtue of their professions more graphically than others comprehend the whole depth of the threat.

It was even in the summer of 1955 that it became clear that in case of war nuclear weapons could be broadly used, that such famed scientists as F. Joliot - Curie, A. Einstein, B. Russell, and several other Nobel Prize laureates made an appeal to the world in which they warned of what consequences from the creation of thermonuclear weapons threatened mankind, and called for the scientists of the world to unite their efforts in fighting against the menace of the military use of nuclear energy.

In response to this call in the Canadian resort of Pugwash, with the material support of Cyrus Eaton, a wealthy American

industrialist and public-minded citizen, a laureate of the International Lenin Peace Prize, 22 renown scientists from ten countries gathered, including USSR and the USA to discuss measures for uniting the efforts of scientists in the name of preventing the catastrophe. Thus was the Pugwash movement born, a characteristic feature of which lies in the fact that it brings together very famous and influential scientists of the world.

At the conferences held in various countries since that time, given the name of Pugwashes, such vital questions as the prohibition of nuclear weapons and their testing, the prevention of a nuclear-rocket war, general and complete disarmament, general security, and international cooperation were examined.

The guiding body of this movement of scientists, the Pugwash Permanent Committee, circulated in 1959 an international questionnaire among the famous workers in science of many countries of the world, including the Soviet Union, aimed at revealing the attitude of scientists to the ideas of the Pugwash movement. The questionnaire yielded a very positive result: more than 10,000 famous scientists whose names are known in international handbooks came out in support of the movement.

The Pugwash conferences have been convening regularly in recent years. The popularity and the influence of the Pugwash movement has been growing from year to year. The conferences held in Austria in 1958, in Moscow in 1960, and in the US in 1961 have been most successful, gathering together many important scientists of the world.

It must be noted with satisfaction that from the very outset of the Pugwash movement, it was given the full support of the head of the Soviet government, N. S. Khrushchev. The participants of the Pugwash conferences are profoundly obligated to him for the fact that he was the only one among the heads of the governments of various states who immediately, with great insight, saw in the movement of scientists an important approach for the uniting of the efforts of workers of science to work against the nuclear threat.

The ninth and tenth conferences, convened from 25 August to 7 September of the current year in Great Britain, were the completion of the stage of establishing the Pugwash movement and reflected the unquestioned fact of its widespread recognition both in world public opinion as well as the official circles of many countries of the world. It is enough to state that in the address of the participants of the tenth Pugwash conference in London, greetings were received from the president and prime ministers of eight countries of the world: N. S. Khrushchev, J. F. Kennedy (US), H. Macmillan (Great Britain), A. Novotny (Czechoslovakia), J. Nehru (India), J. B. Tito (Yugoslavia), K. Nkrumah (Ghana), Ayub-Khan (Pakistan), and also from the Acting Secretary-General of the UN, U Thant.

The conference was devoted to such pressing problems as the prevention of nuclear-rocket war, the assurance of a stable peace on the earth through general and complete disarmament, the responsibility of scientists for solutions of these problems, and international cooperation of scientists.

Participating in the work of both conferences were a total of about 400 notable scientists, observers, and guests from almost 40 countries of the world, including newly established states. Among the delegates were the presidents of academy of sciences, the directors of scientific centers and institutes, members of various governmental consultative committees and international organizations.

The soviet scientists were represented by Academicians A. V. Topchiyev (head of the delegation), L. A. Artsimovich, A. A. Blagonravov, N. N. Bogolyubov, M. M. Dubinin, V. A. Kargin, I. Ye. Tamm and A. N. Tupolev; Corresponding Members of the Academy of Sciences USSR S. N. Vernov, V. S. Yemel'yanov, A. M. Kuzin, Yu. R. Ryznichenko, V. M. Khvostov; the Doctors of Sciences N. N. Inozemtsev, F. I. Kozhevnikov, O. I. Leypunsk, M. I. Rubinshteyn, and N. A. Talensk. The high-ranking nature of the delegation of Soviet scientists made a favorable impression on the other participants, which substantially promoted the success of both conferences. The broad composition and competency of the participants permitted a discussion of all the questions on the agenda with sufficient scientific insight.

The ninth conference, held 25-30 August in the university city of Cambridge, with the participation of more than seventy scientists from eighteen countries of the world, was devoted to problems of general and complete disarmament, nuclear tests, and measures promoting disarmament, international security of the present and of the disarmed world. The work of this conference was done both at the plenary sessions as well as in the five specially formed committees. The committees were formed dealing with the following problems: the reduction and liquidation, under international control, of weapons of mass annihilation and their delivery systems; specific approaches for balanced reduction and elimination of conventional arms and armed forces; political and technical measures, including a ban on nuclear tests, measures promoting disarmament and lessening of international tension; problems of security in the disarmed world; and economic aspects of disarmament.

Papers of Soviet and western scientists were read at the plenary sessions dealing with all the main problems on the agenda. A. V. Topchiyev and H. Brown (US) presented papers on general and complete disarmament, V. M. Khvostov, L. Sohn (US), and P. Blackett (Great Britain) -- papers on the current stage of negotiations on disarmament at Geneva.

It must be noted that the papers of A. V. Topchiyev and V. M. Khvostov, in which a program for general and complete disarmament was laid out, as well as a critical analysis of suggestions on disarmament, were met with great interest on the part of the western countries and served as the basis for a further animated discussion at the sessions of the working committees. This discussion proceeding quite sharply sometimes, demonstrated that in spite of a certain difference in the approaches of the delegates to the solution of several specific problems of general and complete disarmament and an end to nuclear weapons testing, the general efforts of all the participants to remove the danger of thermonuclear war, to ban all nuclear tests for all time, and to assure through disarmament a stable peace on earth. This found expression in several important practical recommendations developed as a result of the discussions and included in the summary paper for the ninth conference.

The tenth Pugwash conference opened under very portentous conditions on 3 September in London. At the table of the presidium were the authors of the appeal of scientists to the peoples of the world: the Nobel Prize laureates B. Russell, L. Pauling, L. Enfeld, S. Powell, Kh. Yukav, and Professor J. Rothblat. Not present at the conference, due to illness, were the Nobel Prize laureates M. Bohr and H. Muller, also signatories to the above appeal, who sent warm messages to its participants. Among the guests was Cyrus Eaton.

The conference was opened by a word of greeting from the British Minister for Scientific Problems, Lord Hallsham.

The greetings of N. S. Khrushchev read by A. V. Topchiyev were warmly responded to by those present. The head of the Soviet government especially emphasized in this message that our anxious time faces great responsibility before history and humanity, when many scientific discoveries are being turned against the well-being and security of mankind and are being used for the production of weapons of terrible destructive force, all men of good will and especially scientists seeing most clearly the catastrophic consequences of a thermonuclear war. "It is gratifying to see," wrote N. S. Khrushchev, "that the Pugwash movement, uniting leading scientists is making a persistent effort to mobilize world public opinion in campaigning for general disarmament, and for the prevention of annihilating thermonuclear war . . . The progressive people of all countries now well understand that the cardinal path for excluding wars between states from the life of mankind and assuring a stable peace on earth is general and complete disarmament under strict international control."

Also read were messages from the Academy of Sciences USSR, the Royal Society of Great Britain, and the National Academy of Sciences of the US.



A graphic address before the countries represented was given by 90-year old Lord B. Russell. The venerable British philosopher emphasized that scientists in our time bear special responsibility for the social consequences of their labors and discoveries.

Precisely about this main theme -- modern international problems and the responsibility of scientists -- were papers read at the tenth conference grouped. These included also essentially the summary paper, presented to the conference by its predecessor -- the ninth conference -- on the problem of general and complete disarmament, nuclear tests, and international security, as well as including the papers of the national Pugwash committees, and papers presented by representatives of various countries. Several papers were read by Soviet scientists: A. V. Topchiyev -- "Scientists and International Security"; V. S. Yemel'yanov -- "Responsibility of Scientists Before Society"; N. N. Bogolyubov -- "On the Growth of International Scientific Cooperation"; V. A. Kargin -- "Constructive Possibilities of Science and the Education of the Younger Generation"; and M. I. Rubinshteyn -- "On the Role of Science in Rendering Aid to the New Independent Countries".

As a result of the lively and sometimes acerbic discussion at the plenary sessions and in the specially formed committees, basic documents of the conference were prepared: a declaration for the world community and the program of the Pugwash movement.

The declaration adopted is of vital importance, since this was the first time that such a large forum of notable scientists of all the continents of the globe almost unanimously (with two abstaining) declared to the entire world that the main task of our time is to prevent the thermonuclear war and to free mankind from the burdensome and threatening arms race. The scientists in all firmness came out for general and complete disarmament and suggested specific measures for its realization. Its start can be the removal in a short time of the delivery systems of mass annihilation weapons with the corresponding effect of control, which can be combined with measures for a substantial reduction in conventional arms and armed forces, and also with a solution of problems related to the presence of military bases and forces on foreign territories. In the declaration it is emphasized that general and complete disarmament is a pressing task, calling for an urgent solution. A large role in its solution, indicated the declaration, is recognized as that of scientists, who must explain to their fellow-citizens how catastrophic would be the consequences of modern war and indicate what measures must be undertaken in order to assure peace.

The declaration contains an important recommendation on the creation for the assistance and addition to national means for detecting nuclear explosions of an agreed number of automatic seismic stations, operating on a national basis, which following

their sealing by the appropriate international body would be established by the efforts of the country on whose territory they are being located. This recommendation arises from the compromise suggestions of eight neutral countries at Geneva on a control system for stopping nuclear tests. The adoption of this system, in the opinion of the scientists present at the conference, would assist in removing suspicions of the possibility of secret resumption of nuclear weapons testing by any country and, together with this, would exclude the risk of espionage, with which the suggestion of the small western powers for on-site inspection is inevitably associated.

The recommendation on the formation of automatic stations attracted great interest and drew sympathetic responses in the world press. The magazine "The New Scientist" in an editorial article, commenting on this recommendation, wrote on 12 September, ". . . this idea is a splendid example of what the scientists-participants of the Pugwash conferences can achieve." The Japanese newspaper, Asahi, on 11 September in a leading article, characterized the suggestion for automatic seismic stations as a constructive one, aimed at overcoming the obstacle in the Geneva negotiations on a nuclear test ban.

The participants of the previous conferences came to the unanimous opinion that the implementation of general and complete disarmament will not entail economic crises in individual countries and that the transfer of the enormous fund now used for military purposes to peaceful needs would have such a favorable effect on the growth of world economy and on the acceleration of socio-economic progress of many countries, and would further the end of poverty on the earth. This is one of the important results of the discussions of the scientists.

In the program of the future activity of the Pugwash movement approved by the tenth conference it is stated that the main purpose of the movement is the attainment of general and complete disarmament. This purpose must define the entire activity of the movement participants. Outlined in the program are practical measures designed to promote the realization of this goal, in particular, the convening of international and regional conferences concerned with general and complete disarmament, the formation of international research groups on disarmament and other problems, the establishment within the framework of the Pugwash movement of regular publication to publicize its activities, etc. The program also contains several recommendations for the development of international scientific cooperation.

Taking into account the substantial rise in the size of the Pugwash movement, the tenth conference elected a wider composition for the Pugwash Permanent Committee, including the following: Lord B. Russell (Chairman), S. Powell, N. Mott and J. Rothblat (Great Britain); A. V. Topchiyev, D. V. Skobel'tsyn, and Ye. K. Fedorov (USSR); H. Brown, B. Glass, and E. Rabinovitch (US); L. Enfeld

(Poland); G. Markovich (France); B. Amaldi (Italy); and V. Sarabaya (India). In addition, the composition of the committee was planned to provide room for representatives of national Pugwash committees of countries of Asia, Africa, and Latin America.

A characteristic feature of the conferences held and the declaration adopted is the summons to the world community to take action. In order to prevent a nuclear-rocket war, to achieve general and total disarmament, and to assure stable peace on the earth, the scientists emphasized, a few declarations are no longer enough.

In conclusion we note with gratitude the great preparatory work done by the British organization committee headed by Professors N. Mott, J. Rothblat, and S. Powell, which undoubtedly promoted the successful work of the conference.